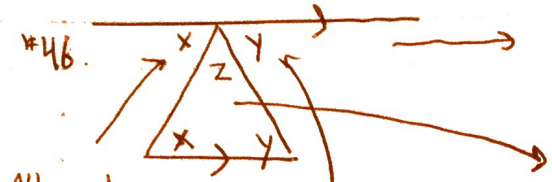
Practice Test FOM 11 FINAL

#45

x	$+2$
$x+2$	$\times 4$
$4x+8$	$+4$
$4x+12$	$\div 4$
$x+3$	-3
x	

#46.



$x + y + z = 180°$ (Angles on a Line)

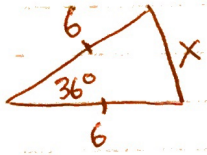
Alternate Interior

Alternate Interior

Sum of $\Delta = x+y+z$

$\therefore$ Sum of $\Delta = 180°$

#47.



$360° \div 10 = 36°$

$x^2 = 6^2 + 6^2 - 2(6)(6)\cos 36$

$x = \sqrt{72 - 72\cos 36}$

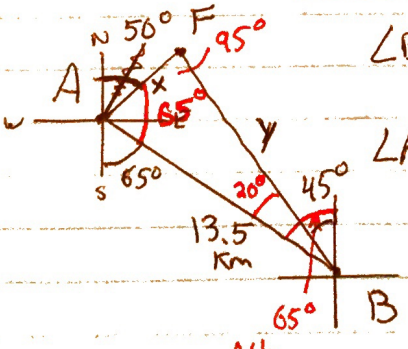
$= 3.7082\ldots$

$P = 10x$

$= 10(3.7082)$

$\boxed{P = 37.1\ m}$

#48.



$\angle BAF = 180° - 65 - 50° = 65°$

$\angle ABF = 65° - 45° = 20°$

$\angle AFB = 180 - 65 - 20 = 95°$

$\therefore \frac{x}{\sin 20} = \frac{13.5}{\sin 95}$ & $\frac{y}{\sin 65°} = \frac{13.5}{\sin 95}$

$\boxed{x = 4.6\ km}$ $\boxed{y = 12.3\ km}$

#49. $\bar{X} = 55$
$\sigma = 0.6\text{m}$

$$\text{Z score} = \frac{X - \bar{X}}{\sigma}$$

$$= \frac{54 - 55}{0.6}$$

$= -1.67 \rightarrow$ look up on Z-score table

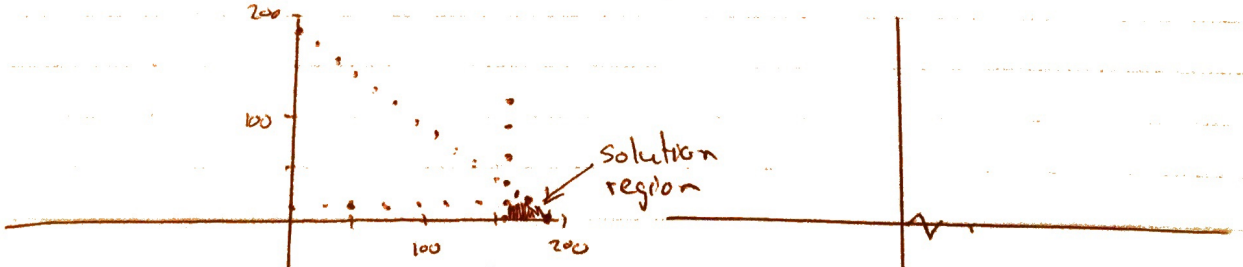
$\Rightarrow 0.0475$

4.75%

*50 Let x = number of economy seats
Let y = number of business class seats
Let R = Revenue

Restrictions $x \in W$
$y \in W$

Constraints $x + y \leq 187$
$x \geq 165$
$y \leq 18$



$R = 393x + 764y$

Intersections are
~~(165,0)~~, $(165, 18)$

$x + y = 187$
$- \quad y = 18$
$x = 169$

$(169, 18)$, $(187, 0)$

$\therefore R = 393(169) + 764(18)$

$R = 80,169$

51. $200(15) = (15 - 0.5x)(200 + 8x)$

$3000 = 3000 + 120x - 100x - 4x^2$

$3000 = 3000 + 20x - 4x^2$

$4x^2 - 20x - 3000 + 3000 = 0$

$4x^2 - 20x = 0$

$x^2 - 5x = 0$

$x(x-5) = 0$

$\boxed{x = 0}$ ~~and~~ $x - 5 = 0$

$\boxed{x = 5}$

a) $15 - 0.5(5)$

$= \boxed{14.75}$

b) Too difficult for test, but this is how you do it:

① We need to find vertex for maximum profit
② Find x-intercepts, then the line of symmetry
③ Use line of symmetry as x-value to find y

$y = (15 - 0.5x)(200 + 8x)$

$15 - 0.5x = 0$ $\quad$ $200 + 8x = 0$

$-0.5x = -15$ $\quad$ $8x = -200$

$x = 30$ $\quad$ $x = -25$

Line of sym $= \dfrac{30 + (-25)}{2} = 2.5$ → x-value of vertex

$$y = (15 - 0.5(25))(200 + 8(25))$$

$$= (15 - 1.25)(200 + 20)$$

$$= (13.75)(220)$$

$$= 3025$$

$\therefore$ vertex is $(2.5, 3025)$

Since we can't have 2½ price changes, it would be either 2 or 3 price changes, both resulting in a profit of

$3024 $\rightarrow$ $y = (15 - 0.5(2))(200 + 8(2))$

$= (14)(216)$

$= \$3024$